
GMA

Group Member Access

General Member Meeting

Paris, 25 March 2009

Brussels, 27 March 2009

Lisbon, 31 March 2009

Amsterdam, 1 April 2009

London, 2 April 2009



GMA Member Presentation - March / April 2009

Objectives & Context

Business Model

Solutions & Tariff

Migration Strategy Principles

Planning

Next Steps

Keynote

- For the sake of simplicity, the following term will be used throughout the presentation and should be understood as follows:

- **“User(s)” shall mean Member(s) and/or ISV(s)**

Objectives (1/2)

- **GMA** is the new name for the CMA project which was officially announced in December 2008
- The key objectives of GMA are to provide Users with:
 - Global connectivity to LCH.Clearnet Group clearing services
 - Highly secure and scalable access solutions
 - Harmonised pricing between SA & Ltd and between solution providers
 - Possibility for sharing access with existing networks
 - Simplified architecture at LCH.Clearnet SA Users' premises

Objectives (2/2)

- Approach followed :
 - Secure and scalable architecture design matching LCH.Clearnet Group requirements for volume growth and geographic reach
 - Extensive selection process of global and neutral solution providers
 - Choice for a Direct Commercial model providing Users with maximum cost efficiency, harmonised pricing and controlled migration process
 - Design of a new centralised clearing gateway solution for SA Members (LCAP) replacing the CAP/MAP solution due to stop in 2009
 - Roll out program designed for completion in 2009 :
 - For all SA Cash and Derivatives clearing members
 - For Ltd LME clearing members in priority

Context

- GMA is one step of a larger technology program aiming at:
 - Creating a flexible and resilient framework for new technology adoption depending on business opportunities and requirements
 - Matching financial industry market standards and protocols for messaging and file transfer
- GMA roll out is designed to allow a smooth transition from existing solutions to the new access architecture
- Reminder: NYSE Technologies is the direct provider to LCH.Clearnet SA Users of the current legacy network (Bourse Connect AMS network) and CAP/MAP

Solutions: Overview

- End-to-end **secured IP managed network** solution between Users sites and LCH.Clearnet data centers
 - 2 selected providers (Choice to be made by Users):
 - RadianzNet (BT)
 - SFTI Managed Connection (NYSE Technologies)
 - Compliant with the best security and business continuity practices
- Centralized gateways named **LCAPs**
 - Localized in LCH.Clearnet SA data centers
 - Providing the exact same functionalities as existing CAP/MAP solution
 - No more “clearing appliances” at Users’ premises

Solutions: Managed Network Features

- **Resiliency:** all production access solutions are based on resilient equipment and accesses to resilient IP managed network allowing connection to central applications infrastructure
- **Security:** all communications to LCH.Clearnet are encrypted and controlled end-to-end by LCH.Clearnet and its providers
- **Capacity and scalability:** minimum bandwidth requirements have been set to 2 Mbps circuits for SA and Ltd each, with possibility to upgrade the circuits to 10 Mbps depending on Clearing activity profile
- **Mutualisation:** Possibility to mutualise existing RadianzNet or SFTI Managed Connection network infrastructure to gain access to all LCH.Clearnet services

Solutions: Support

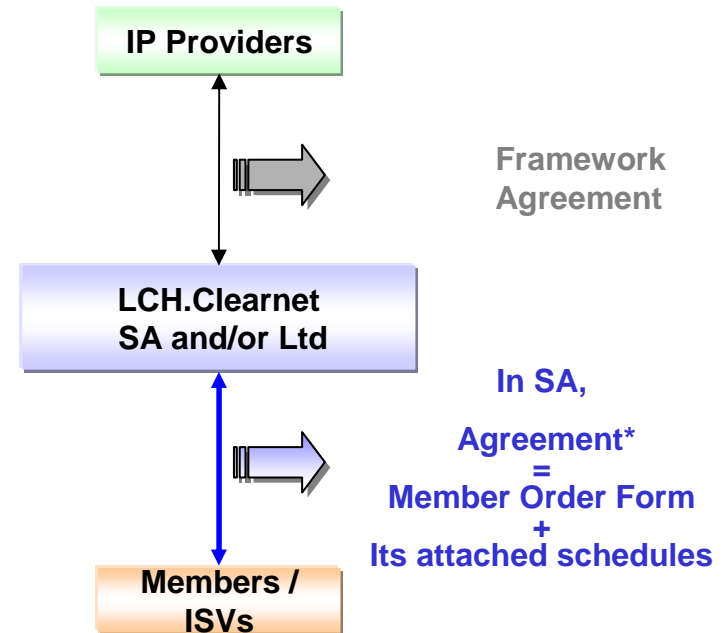
- LCH.Clearnet will implement appropriate structures and organisations to provide Users with appropriate support services
 - Network governance at the Group level
 - Members support for change and incident management
 - Operated 5 days a week (as today)
 - The CTH in LCH.Clearnet SA
 - The Service Desk in LCH.Clearnet Ltd
 - With close coordination between both helpdesks

Solutions: Key Benefits to Users

- Harmonised services & network governance at Group level
- Possibility to access to all services of the LCH.Clearnet Group
- Improved bandwidth at competitive cost
- Choice of IP network provider from LCH.Clearnet's approved list
- Solution free of any “clearing appliances” at Users' site(s)

Business Model: Contractual Framework (1/2)

- Direct business model between LCH.Clearnet and Users
- Agreement between:
 - IP network solutions providers and LCH.Clearnet giving right to LCH.Clearnet to offer network services to their Users
 - Users and LCH.Clearnet governing the provision by LCH.Clearnet of Clearing access solutions (IP Managed Network connectivity, Clearing Gateway, support services)

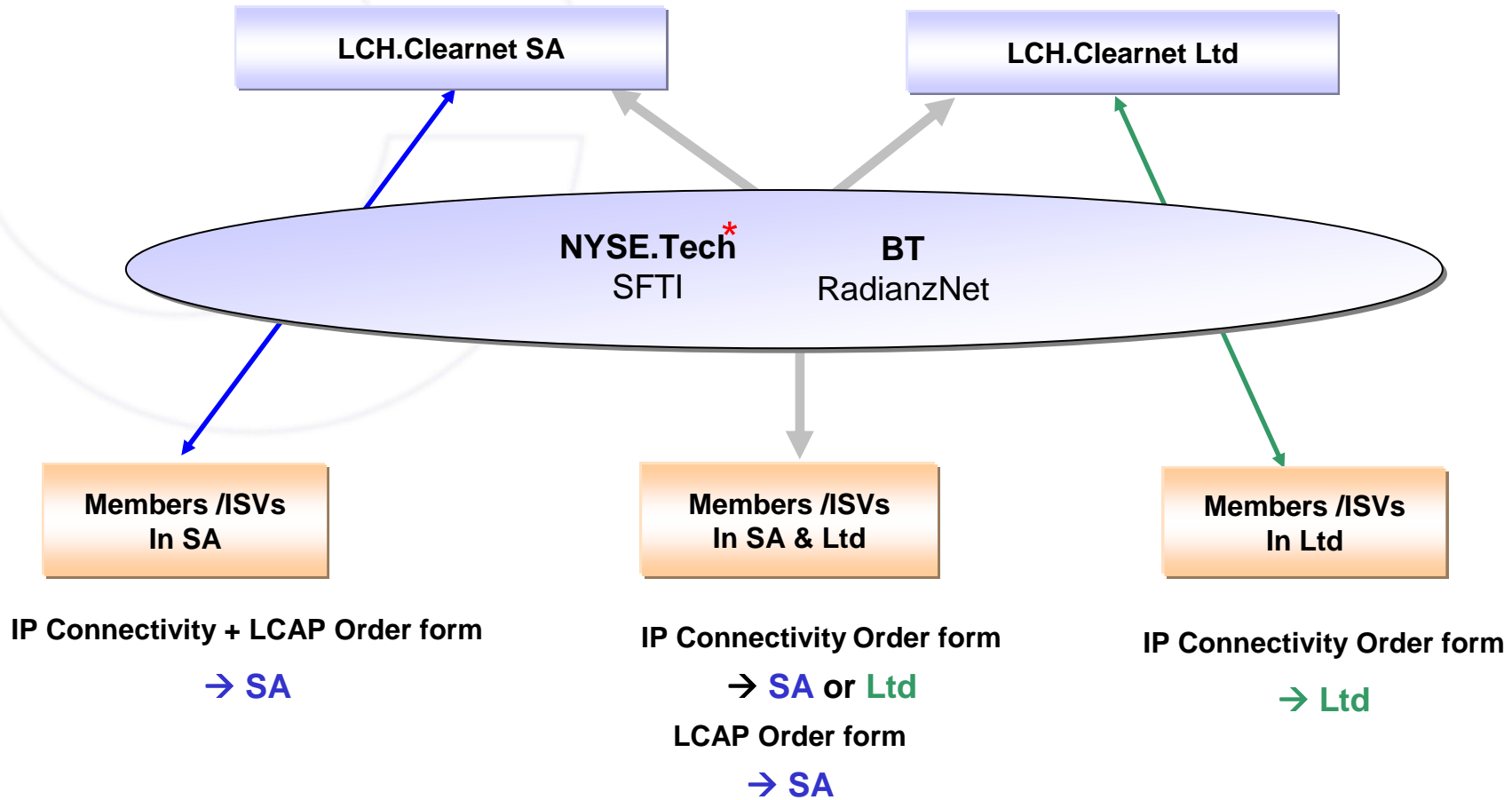


(*): to be superseded by the Access Agreement when ready

Business Model: Contractual Framework (2/2)

- Direct contract between LCH.Clearnet SA and:
 - Member
 - Member to contract with LCH.Clearnet SA (Order Form)
 - Member to define the site(s) to be connected
 - Member to receive invoices from LCH.Clearnet SA
 - ISV (i.e. providing clearing solutions or services to a member)
 - ISV to contract with LCH.Clearnet SA (Order Form)
 - ISV to provide LCH.Clearnet SA with Delegation Form(s) duly completed by the member(s)
 - ISV to define the site(s) to be connected
 - ISV to receive invoices from LCH.Clearnet SA

Business Model: Ordering Process (1/2)

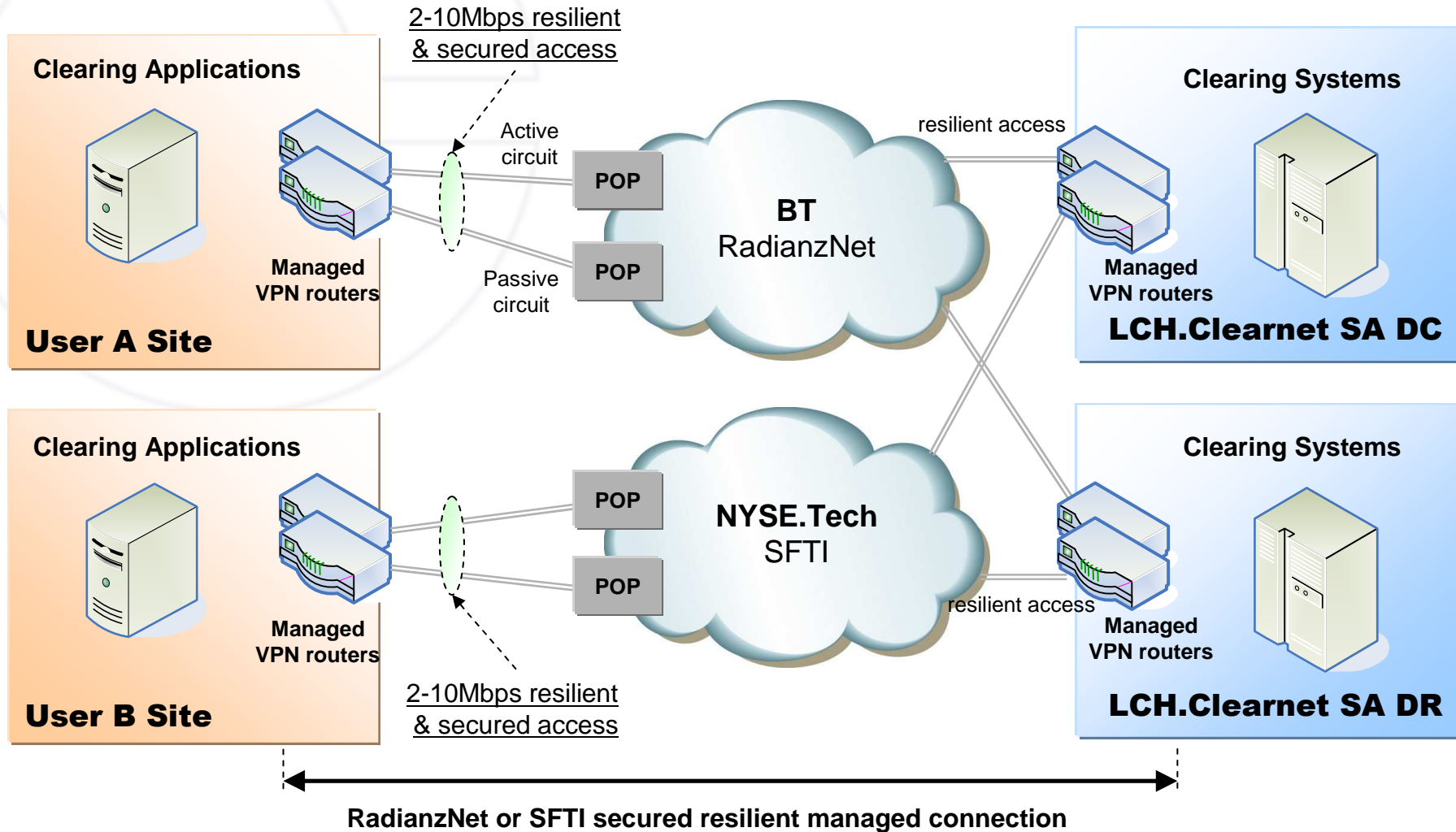


(*): SFTI connectivity to Ltd Datacenters will be offered 2nd half of 2009

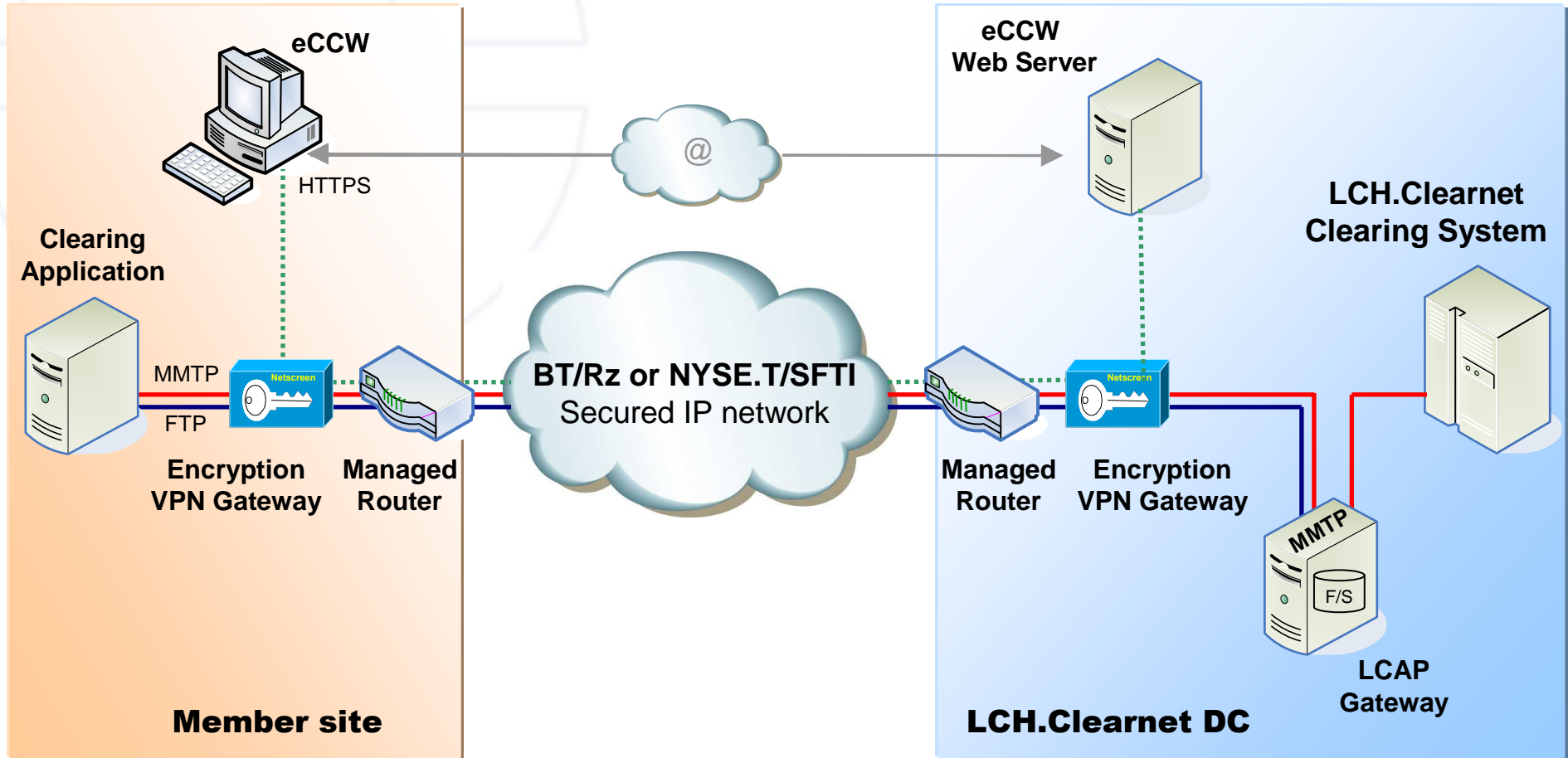
Business Model: Ordering Process (2/2)

- To gain access to Cash and/or Derivatives Clearing Services of LCH.Clearnet SA:
 - Users of LCH.Clearnet SA only must order with SA:
 - IP network connectivity
 - New clearing gateway (LCAP)
 - LCH.Clearnet SA and Ltd common Users must order:
 - With SA or Ltd: IP network connectivity (also allowing access to LCH.Clearnet Ltd's LME clearing services)
 - With SA: New clearing gateway (LCAP)

Solutions: Connectivity Principles to LCH.Clearnet SA



Solutions: Member Connectivity Scheme



Solutions: User Connectivity Requirements

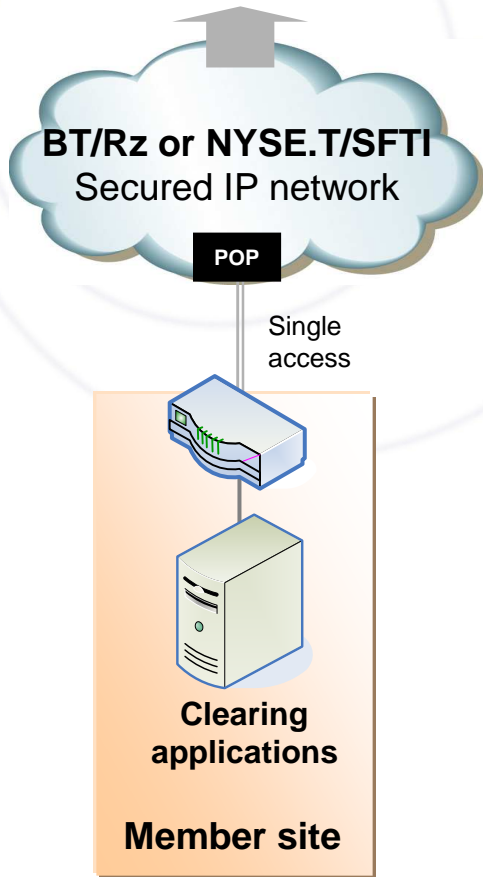
- Production environment
 - 1 mandatory **resilient access** i.e. 2 circuits from different carriers managed by a unique provider
 - Possibility to split the resilient access between 2 interconnected sites
 - Possibility to use the resilient access for test purpose as well
 - **2 Mbps: Minimum Bandwidth per circuit**
 - **4Mbps: Minimum bandwidth per circuit required for accessing both CCPs (SA & Ltd)**
- Test environment with fully separate access (optional)
 - 1 non resilient access authorised (1 circuit only)
 - Minimum bandwidth of the circuit: 2 Mbps

Solutions: LCAP Features

- Same functionalities as CAP/MAP, only exception being:
 - The encryption/authentication service is now operated by the VPN Gateway (managed by the IP solution providers) based on IPSec standard
- Reminder of key features
 - Same rules and limitations as CAP/MAP
 - Max 5 SLE per LCAP
 - Dedicated LCAP per environment (Production or Test)
 - Same real-time clearing messaging (MMTP protocol)
 - Same clearing and market data file transfer capabilities (FTP protocol)

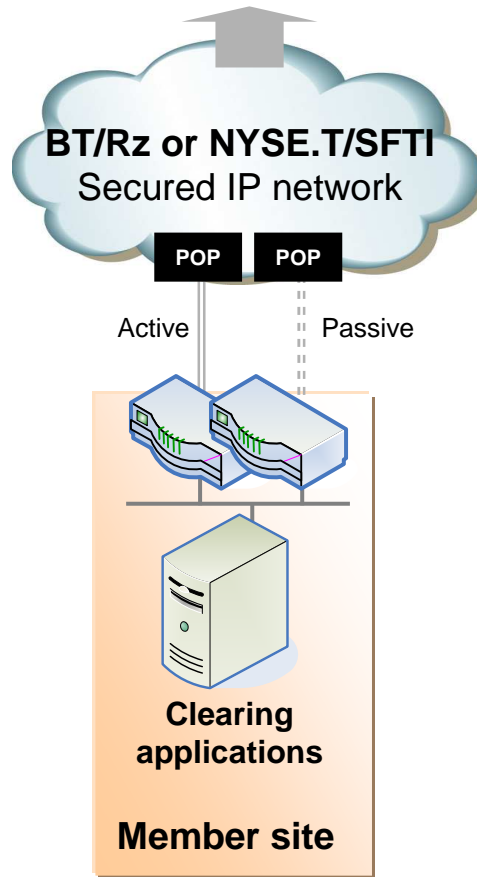
Solutions: Connectivity

LCH.Clearnet Clearing services



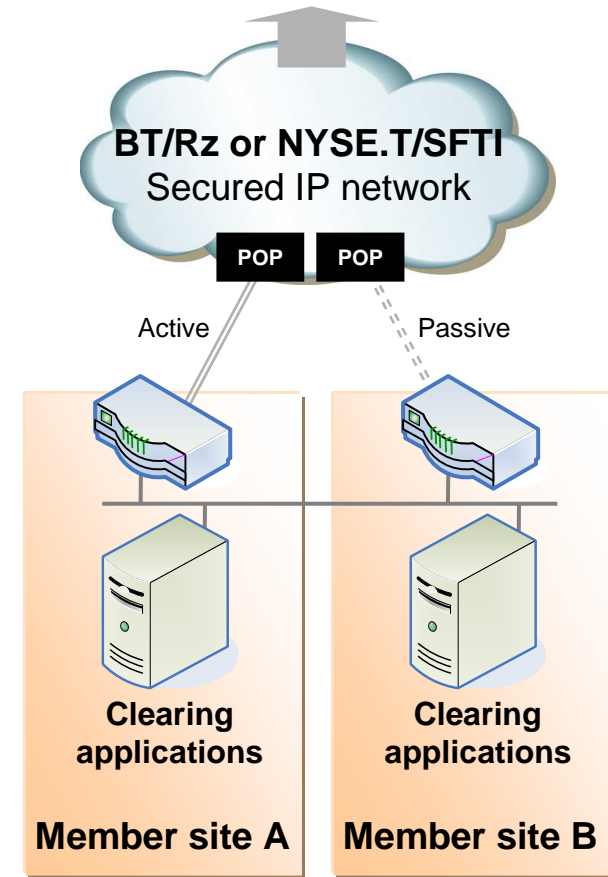
BRONZE (Test only)

LCH.Clearnet Clearing services



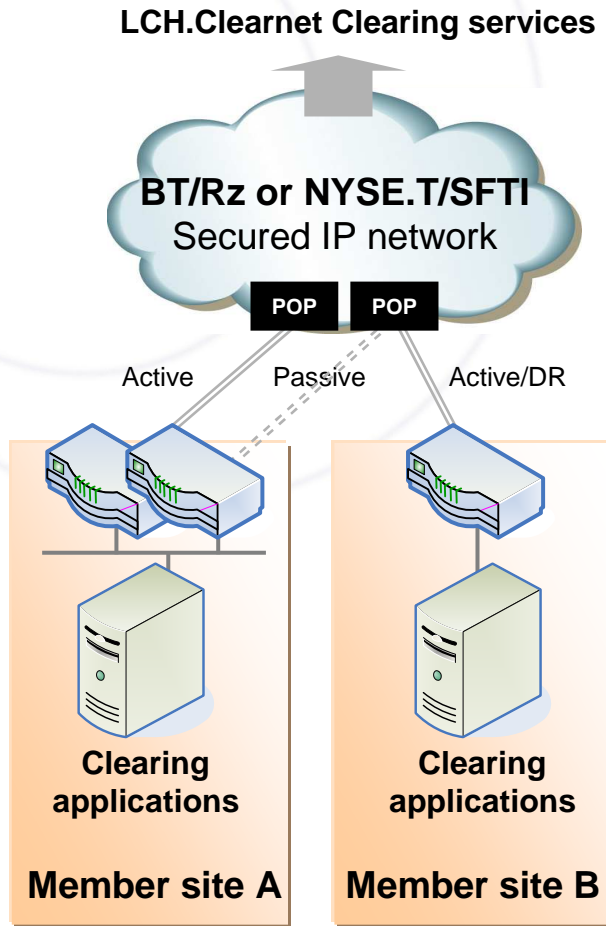
SILVER

LCH.Clearnet Clearing services

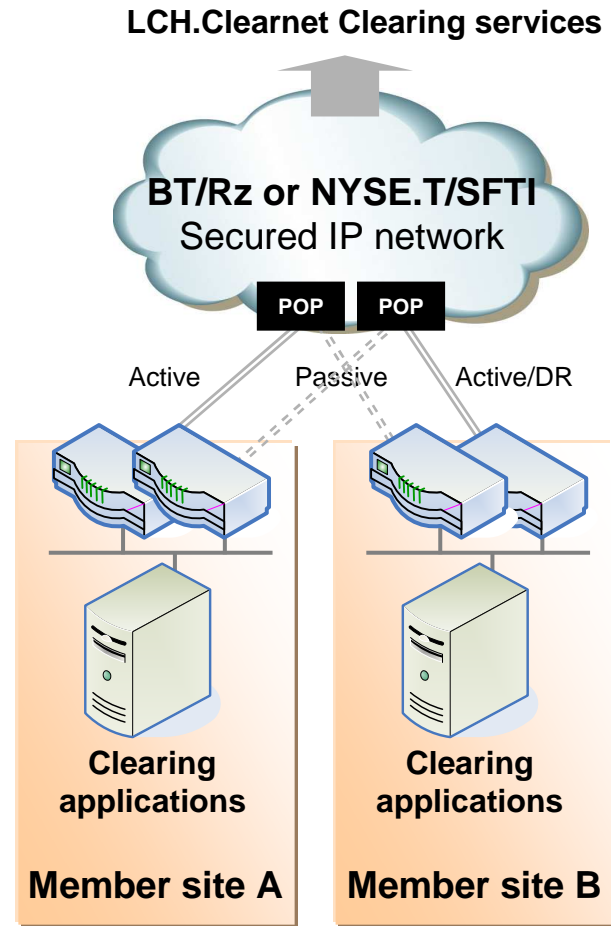


SILVER / Split sites

Solutions: Connectivity



GOLD



PLATINUM

Solution: Tariffs grid - Network

TIER	DESCRIPTION	BANDWIDTH						
		2Mbps		One off Cost	4Mbps	6Mbps (BT Only)*	8Mbps (BT Only)*	10Mbps
		One Off Cost	Monthly Cost		Monthly Cost	Monthly Cost	Monthly Cost	Monthly Cost
Platinum	Four circuits from dual carriers to two member locations.	€ 5,000	€ 3,000	€ 10,600	€ 4,000	€ 4,100	€ 4,200	€ 4,500
Gold	Three circuits, two circuits to the members primary location via two carriers and a single connection to another site	€ 4,375	€ 2,625	€ 9,275	€ 3,500	€ 3,550	€ 3,675	€ 3,940
Silver	Two circuits, dual carriers to one member location , or over split member sites	€ 2,500	€ 1,500	€ 5,300	€ 2,000	€ 2,050	€ 2,100	€ 2,250
Bronze	Single Circuit, Single Location (for sole test purpose)	€ 1,875	€ 1,125	€ 3,975	€ 1,500	€ 1,550	€ 1,575	€ 1,690

- The same costs apply for the BT/ Radianznet and Nyse Technologies/ SFTI Managed Connection solutions
- Access to LCH.Clearnet services via Nyse Technologies/SFTI solution is available for Users already connected or plan to connect to SFTI (“SFTI connected” customers) via a SFTI Managed Connection (SMC)
- Bronze tier is for Users who require dedicated access for sole testing purpose

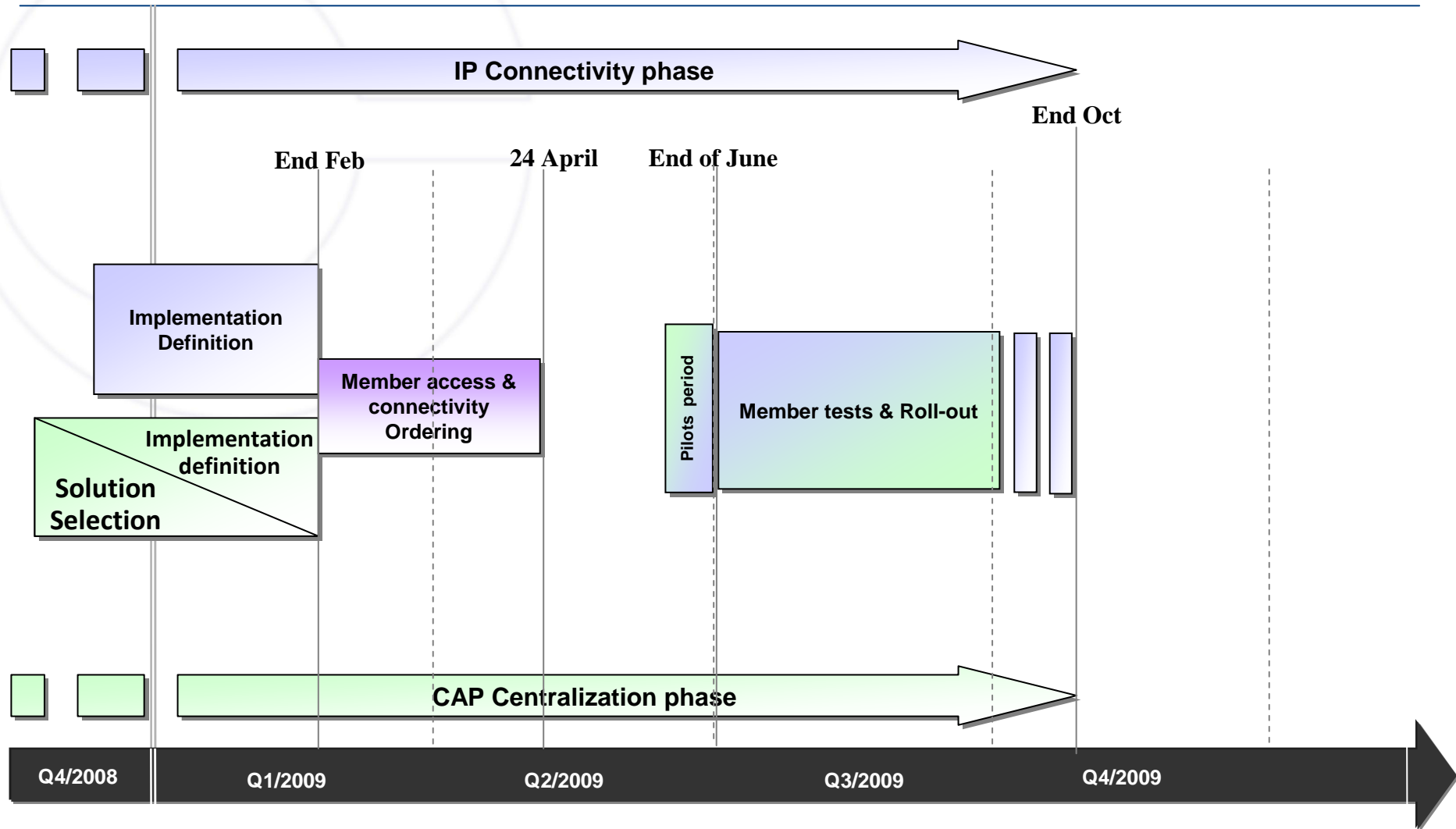
(*): 6 & 8 Mbps also available on SFTI

Solution: Tariffs grid - LCAP

TIER	DESCRIPTION	One Off Cost	Monthly Cost
Production	CAP Production migrated to LCAP (one for one, with all existing SLE's)	€ 500	€ 400
Test (EUA)	CAP Test access to EUA migrated to EUA LCAP (one for one, with all existing test SLE's)	€ 500	€ 400

- CAP/MAP are migrated on the basis of one for one whether they are used for production, back-up, test or any other purposes
- eCCW connectivity is possible through new IP connectivity
- Up to five eCCW accesses can be migrated onto a 2 Mbps access
- Licence costs for eCCW remain unchanged

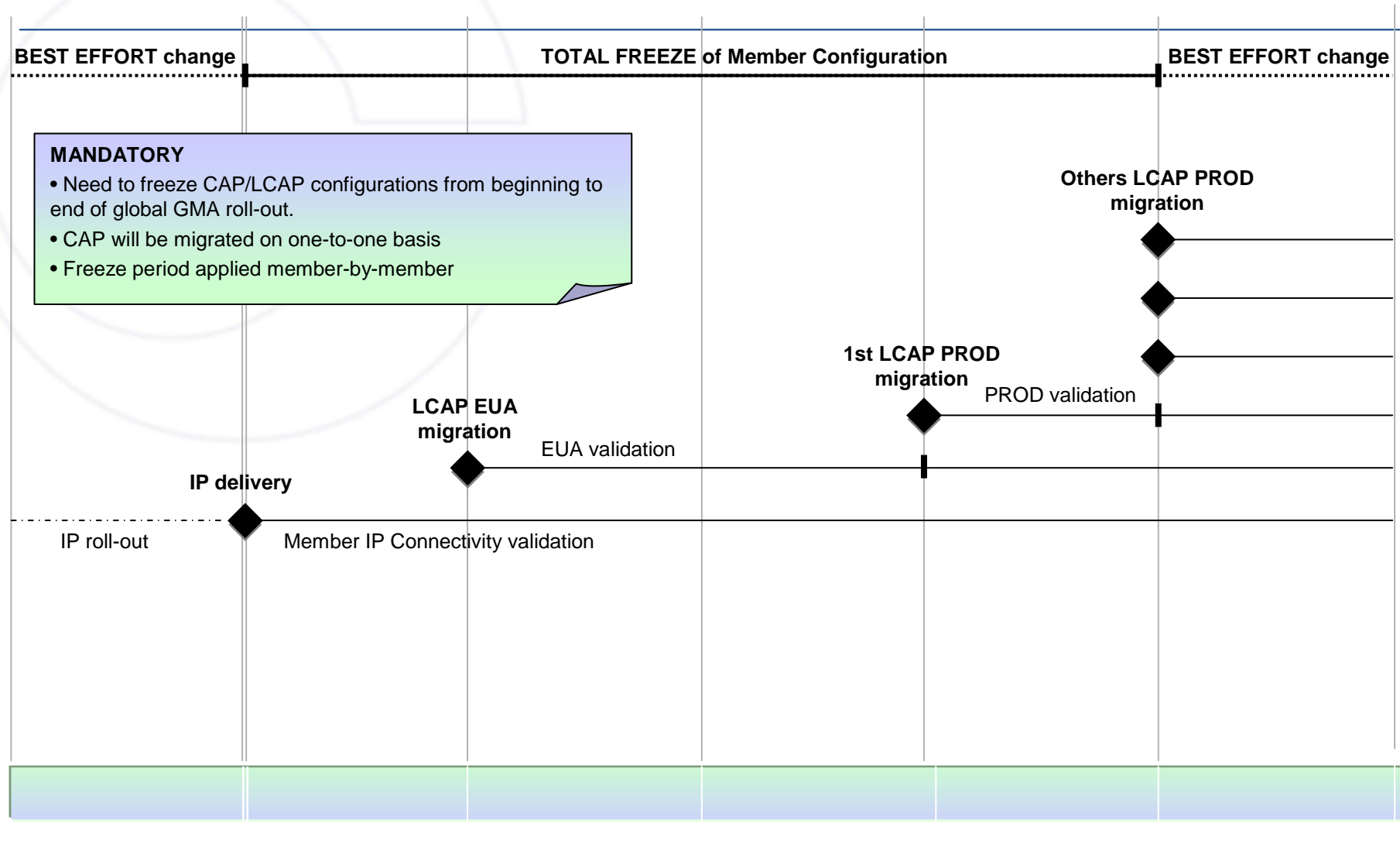
Planning: High-Level Stage Planning



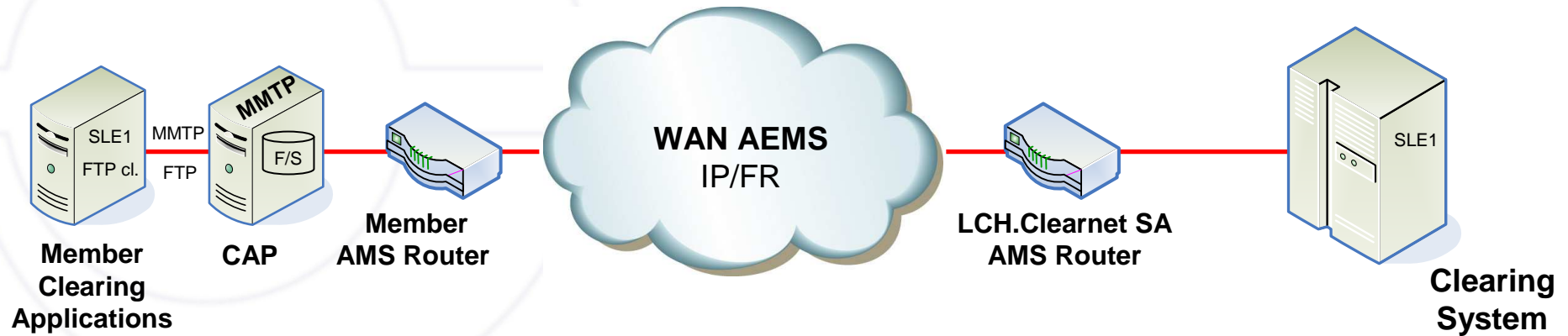
Migration Strategy: Principles

- New IP network installation prior to LCAP set-up
- Migration to LCAP as soon as possible after IP network installation
- As far as production environment is concerned, LCAP migration to take place during week-ends
- All CAPs/MAPs replicated 1 for 1 in LCAPs (with their respective SLEs)
- One-shot migration per CAP with all existing SLEs attached
- 5 day logs available on LCAPs
- Freeze of Member configuration
 - For each Member, total freeze of its CAP/MAP configuration during their own migration period
 - Best-effort change from beginning to end of Global Member Roll-out period

Migration Strategy: Member Sequence Principle



Migration Strategy: Stage 1/2 – Existing Situation



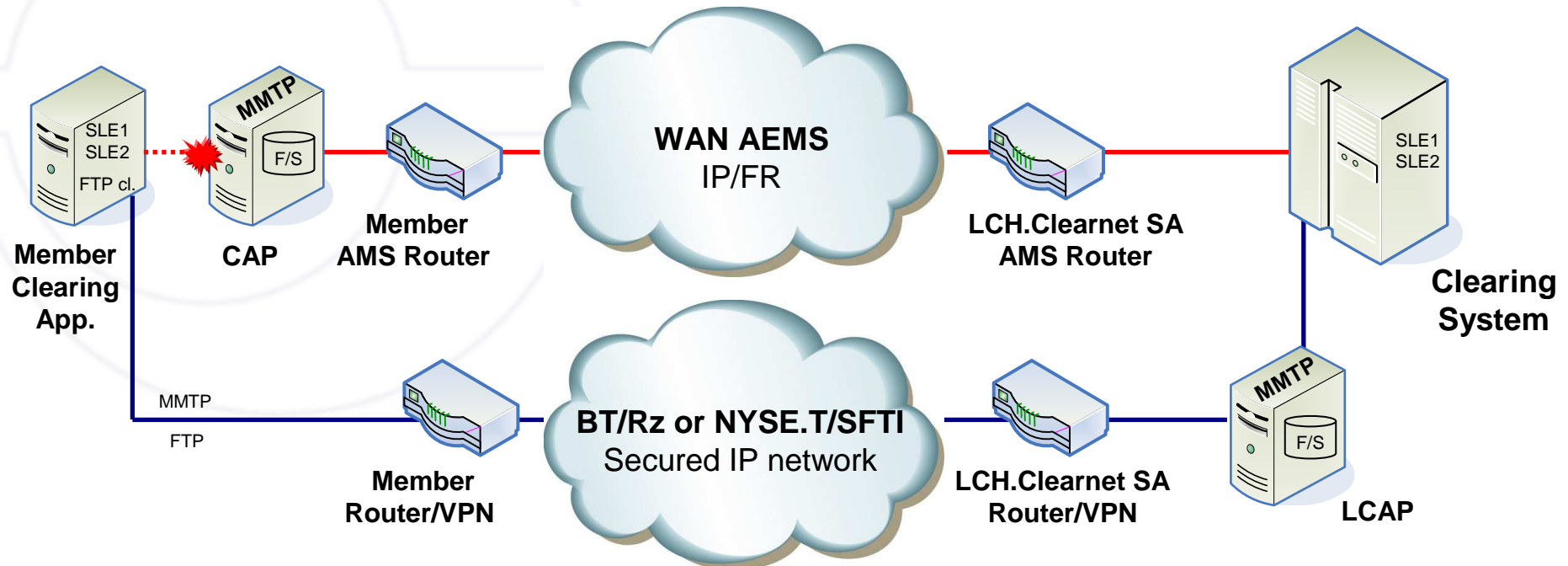
Member Clearing Applications	
File Transfer	Messaging
FTP	MMTP API

F/S

MSG

- Existing connectivity with :
 - BourseConnect network
 - SLE1 open MMTP session with @IP CAP (LAN port) & Login/Password
 - File Transfer in FTP between Member File Server & CAP with generic login / pwd (no expire option)

Migration Strategy: Stage 2/2 – Progressive Migration



- **Progressive migration** – Each CAP with its attached SLEs, by:
 - modifying existing SLE / creating a new subscriber SLE2 (new login/password) with new @IP LCAP
 - connecting this new subscriber (SLE2) to the new VPN gateway (physical connection and logical configuration)
 - configuring File Transfer in FTP between Member File Server & LCAP with dedicated login / pwd (no expire option)
 - LCH.Clearnet SA is contemplating offering the choice between compressed files (.GZ) or non-compressed files
 - closing all logical ports IN/OUT of the old subscriber (SLE1) : no command authorized
 - after 5-days log recovery : dismantled old subscriber (SLE1)
 - modifying network routing parameter for eCCW

Migration: Summary of Main Changes for Users

- Modifying the existing subscriber/Creating a new subscriber (SLE) in its applications with new destination parameters :
 - new @IP destination = @IP LCAP (*supplied by LCH.Clearnet SA*)
 - new MMTP login / password (*supplied by LCH.Clearnet SA*)
- Configuring FTP file transfers with the new dedicated FTP login / password (*supplied by LCH.Clearnet SA*) - no expire option.
- Connecting the new subscriber to the VPN Gateway device installed by the IP Provider (physical connection and configuration)
- Communicating to LCH.Clearnet SA the @IP SLE and @IP default gateway (*supplied by the Member*)

Next Steps

Members & ISVs:

- Completing and returning the duly signed Member Order Form before April the 24th at the latest (and Delegation Forms when appropriate)
 - Making inventory of all existing CAPs/MAPs and SLEs
 - Cross-checking the CAP/MAP list with LCH.Clearnet SA
 - Making inventory of all existing FTP clients
 - Calling on LCH.Clearnet SA's support if needed

LCH.Clearnet SA:

- Issuing the "Technical test Guide" by end of April
- Issuing the "Service Description" document April 10th
- Organizing the next GMM by end of May

LCH.Clearnet SA Contacts

Customer and Market Management - Product Implementation

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